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LETTER AND COMMENTS FROM FLORIDA DEPARTMENT OF ENVIRONMENTAL
PROTECTION REGARDING TECHNICAL REVIEW OF TECHNICAL MEMORANDUM FOR
EVALUATION OF SOIL CONCENTRATIONS SITE 38 NAS PENSACOLA FL
5/14/2004
FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION



Jeb Bush
Governor

Department of Environmental Protection

Twin Towers Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Colleen M. Castille
Secretary

May 14, 2004

Mr. Bill Hill
Code ES311
Southern Division
Naval Facilities Engineering Command
2155 Eagle Drive
P.O. Box 190010
North Charleston, South Carolina 29419-9010

RE: Technical Memorandum Evaluation of Soil Concentrations Site 38, NAS Pensacola, Florida

Dear Mr. Hill,

The Department has reviewed the subject document dated August 13, 2003, (received August 14, 2003). The Department finds the document to be adequate for its intent and have the following comments:

1. **Section 1.3, page 16, 1st paragraph:** In this paragraph it is stated that the 95% UCL calculation could not be used because the data was neither normal or lognormal. When this happens just use the Cheby Chev calculation option.
2. **Figures:** The colors used for surface or subsurface soil contamination are too similar. The color used for exceedences of 3xISTL and the color used for 3xRSCTLor Acute Toxicity are hard to separate on when viewing the figures. please change the colors to make this easier to read.

Attached are comments from Hugo Ochoa with the University of Florida. If I can be of any further assistance with this matter, please contact me at (850) 245-8998

Sincerely,

Tracie L. Vaught
Remedial Project Manager

for
JHC

JJC

ESN



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April 16, 2004

Ligia Mora-Applegate
Bureau of Waste Cleanup
Florida Department of Environmental Protection
Room 471A, Twin Towers Office Building
2600 Blair Stone Rd.
Tallahassee, FL 32399

Dear Ms. Mora-Applegate,

At your request, we have reviewed the *Technical Memorandum Evaluation of Soil Concentrations, Site 38, NAS Pensacola, Florida*. The document presents surface (0-2 ft. below land surface, bls) and subsurface (> 2 ft. bls) soil concentration data for areas surrounding Buildings 71 and 604. Building 71 has been demolished and only the concrete foundation remains. The vacant lot is being used for parking of trucks. Building 604 is currently being used for storage. Present and expected future use for both areas is industrial. Some metals, PAHs, Aroclor mixtures, and dieldrin have been found to exceed their respective SCTLs in paved and unpaved areas. The analysis of the data includes an initial comparison with default SCTLs, followed by an identification of "hot spots" by comparison of concentrations with 3 x the respective residential and industrial SCTL or a SCTL based on acute considerations, when appropriate. To evaluate risks from direct exposure, a 95% upper confidence limit (UCL) of the mean was calculated for soil data from each soil horizon and building. When calculation of a 95%UCL was not possible due to data limitations, a simple average was used as the exposure concentration. In addition, surface and subsurface soils concentrations were compared with the respective leachability based SCTL. Based on our review of the technical memorandum, we have the following comments:

1. The analysis includes an evaluation of risks based on acute exposure. We would like to point out that this evaluation is not only valid in the context of a residential scenario, but for any land use where the presence of small children may be reasonably expected (e.g., school or day care, park, etc.).
2. The evaluation of risks from carcinogenic PAHs (cPAHs) is more appropriately done by calculation of benzo(a)pyrene equivalent concentrations (B(a)P Eqs). The FDEP requires evaluation of additive effects of contaminants co-occurring at a site. In the case of PAHs,

the toxic equivalency approach provides a valid method for accounting for additive effects of this class of chemicals.

3. The evaluation of cPAHs is complicated by the quality of the data. An inspection of the soil cPAH data shows that detection/reporting limits are relatively high, and often higher than estimated or non-flagged data. High detection limits can result in overestimation of concentrations, especially when calculating B(a)P Eqs. In addition, the presence of reporting limits higher than estimated or detected concentrations impairs the ability of current tools to calculate a 95% UCL. We suggest ensuring that detection, not reporting limits, are used and that a more sensitive analytical method for PAHs be used in the event more sampling is considered necessary.
4. When calculation of a 95%UCL is not possible, use of the simple mean is not appropriately conservative. For several contaminants, the report calculates a simple mean for comparison with direct contact SCTLs because the data sets are too small ($n < 10$) and/or contain too many non-detects ($> 30\%$). When a 95% UCL cannot be calculated, the maximum concentration should be used instead. Of course, more data can also be obtained to better characterize the site. As you may know, we have been developing a software tool that can calculate a 95%UCL for many instances where ProUCL can't. Using this tool, we have calculated the following values (Table 1), which should replace the simple mean values presented in Table 6 of the Report.

Table 1. 95% UCL concentrations calculated for contaminants for which the simple mean was used in the Report under review.

Contaminant	Bldg 71 Surface soil	Bldg 71 Subsurface soil	Bldg 604 Surface soil	Bldg 604 Subsurface soil
Arsenic, mg/kg	1.6	2.6	3.3	3.0
Chromium, mcg/kg		69		
Copper, mg/kg	790	46	74	67
Iron, mg/kg				4927
Lead, mg/kg		151	139	242
Vanadium, mg/kg	10.7		12	6.2
Aroclor-1254, mcg/kg	2579	11,000		
Aroclor-1260, mcg/kg			403	
Benzo(a)anthracene, mcg/kg	838		1950	1293
Benzo(a)pyrene, mcg/kg		873	1960	1216
Benzo(b)fluoranthene, mcg/kg		533	1960	1956
Dibenzo(a,h)anthracene, mcg/kg	1812	794		1700* (800)
Indeno(1,2,3-cd)pyrene, mcg/kg				678
Dieldrin, mcg/kg			23	

* Value corresponds to the maximum concentration (number of detected values < 3). In cases where the maximum corresponds to a detection limit, the highest detected value is presented in parenthesis.